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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

TIGHE et al

Atty. Ref.: 540-204

Serial No. 09/582,760

TC/A.U.: 3644

Filed: June 30, 2000

Examiner: G. Barefoot

For: AIRCRAFT STRUCTURE FATIGUE ALLEVIATION

* * * * *

August 16, 2005

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

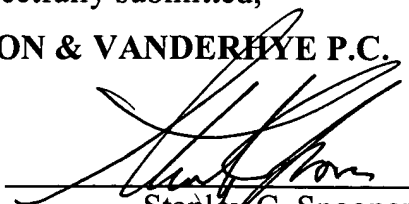
RESPONSE

This is responsive to the Official Action mailed August 2, 2005 (Paper No. 20050731), the date of response to which is September 2, 2005. It is noted that the Patent Office has not acted on Applicants' Request for Rehearing filed May 10, 2005. Enclosed is a copy of the Request for Rehearing filed May 10, 2005, together with a copy of a PTO mail room date-stamped postcard acknowledging receipt of the Request for Rehearing. Prompt consideration of the previously filed Request for Rehearing is respectfully requested.

Respectfully submitted,

NIXON & VANDERHIE P.C.

By:


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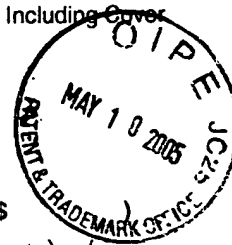
Serial No.: 09/582,760
Inventor/s: TIGHE et al
Title: AIRCRAFT STRUCTURE FATIGUE ALLEVIATION

C#/M#: 540-204

Atty: Stanley C. Spooner

Date: May 10, 2005

- ☐ Address Indication Form
- ☐ Amendment
- Pages Specification, Claims & Abstract
- Claims; Sheets of Drawings
- ☐ Declaration (Pages)
- ☐ Assignment (Pages) Including Cover
- ☐ Priority Document(s)
- ☐ Base Issue Fee Transmittal
- ☐ Notice of Missing Parts
- ☐ Check Enclosed (\$)
- ☐ Credit Card Payment Form attached (\$
- Other: Request for Rehearing (in triplicate) w/ cover



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

In re Patent Application of

Atty Dkt. 540-204

TIGHE et al

C# M#

Serial No. 09/582,760

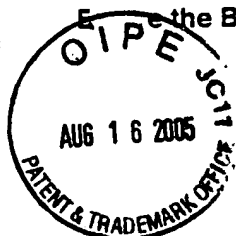
TC/A.U.: 3644

Filed: June 30, 2000

Examiner: G. Barefoot

Title: AIRCRAFT STRUCTURE FATIGUE ALLEVIATION

Date: May 10, 2005

**Mail Stop Appeal Brief - Patents**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

☐ **Correspondence Address Indication Form Attached.**☐ **NOTICE OF APPEAL**Applicant hereby **appeals** to the Board of Patent Appeals and Interferencesfrom the last decision of the Examiner twice/finally rejecting \$500.00 (1401)/\$250.00 (2401) \$
applicant's claim(s).☐ An appeal **BRIEF** is attached in the pending appeal of the
above-identified application \$500.00 (1402)/\$250.00 (2402) \$☐ Credit for fees paid in prior appeal without decision on merits -\$ ()☒ A request for rehearing is attached. (no fee)☐ Petition is hereby made to extend the current due date so as to cover the filing date of this
paper and attachment(s)
One Month Extension \$120.00 (1251)/\$60.00 (2251)
Two Month Extensions \$450.00 (1252)/\$225.00 (2252)
Three Month Extensions \$1020.00 (1253)/\$510.00 (2253)
Four Month Extensions \$1590.00 (1254)/\$795.00 (2254) \$☐ "Small entity" statement attached.

Less month extension previously paid on -\$ ()

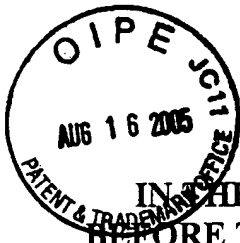
TOTAL FEE ENCLOSED \$ 0.00

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension. The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our **Account No. 14-1140**. A duplicate copy of this sheet is attached.

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Signature:



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of

TIGHE et al

Serial No. 09/582,760

Filed: June 30, 2000

For: AIRCRAFT STRUCTURE FATIGUE ALLEVIATION

Appeal No.: 2005-0113

Atty. Ref.: 540-204

TC/A.U.: 3644

Examiner: G. Barefoot

May 10, 2005

Mail Stop Appeal Brief - Patents

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

REQUEST FOR REHEARING
PURSUANT TO TITLE 37, PART 41.52

Sir:

Appellant appreciates the Decision by the Board of Patent Appeals and Interferences issued on March 10, 2005 based upon an Oral Hearing conducted February 23, 2005. However, it is believed that the Board either misapprehended or overlooked portions of arguments made by Appellant and rehearing on these issues with respect to claims 1, 2, 4 and 8-10 is respectfully requested.

SUMMARY OF ISSUES

First, current Court of Appeals for the Federal Circuit decisions require that in order to anticipate or render obvious pending application claims, the burden is on the Examiner to establish where those claims disclose claimed structures. It is believed that the Board failed to indicate where the Examiner has shown or otherwise indicated where

the claimed subject matter was indicated in the cited prior art. Second, even if claimed structural elements are disclosed in a plurality of references, the burden is on the Examiner to provide some “reason” or “motivation” for combining those references. The Board has identified no such rationale or motivation by the Examiner as a basis to support his combinations of references under 35 USC §103. Third, the Board’s adoption of the “inherency” principle possibly admits that claimed structures are not present in any prior art reference, but in any event requires that the cited prior art must have a clear teaching of the missing material. The Board has failed to identify any clear teaching of the missing claimed elements in any cited prior art reference.

(1) Current Court of Appeals for the Federal Circuit decisions require that in order to anticipate or render obvious pending application claims, the burden is on the Examiner to establish where those claims disclose claimed structures

As identified on page 8 of Appellant’s Appeal Brief and as reiterated during the Oral Hearing, “the PTO has the burden under §103 to establish a *prima facie* case of obviousness.” *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). The Court of Appeals for the Federal Circuit clarified that the PTO “can satisfy this burden only by showing some objective teaching in the prior art” *Id.*

As pointed out in the Appeal Brief and at the Oral Hearing, the Examiner has failed to indicate where or how either the two applied references, Makhonine or Bell, contains any teaching of structures set out in Appellant’s independent claim 1, i.e., the four “means-plus-function” structural recitations. Appellant’s invention, as set out in claim 1, comprises a fuel transfer apparatus for an aircraft comprising (a) at least two fuel

tanks arranged in an inboard to outboard alignment; (b) at least one pump for transferring fuel between the tanks; and (c) a fuel management system comprising the four recited elements, i.e., the “means for receiving a first input signal,” “means for receiving a second input signal,” “means for initiating the transfer . . . in response to the first input signal” and “means for initiating the transfer . . . in response to the second input signal.”

(A) No proper In re Donaldson analysis of any of the four “means” recitations

Pursuant to the requirements of 35 USC §112 (paragraph six), the first burden on the Examiner (and the Board) is to determine what is covered by the “means plus function” recitations in the claim. This is accomplished by looking to the specification and construing the claim to cover the corresponding structure disclosed therein and equivalents thereto.

Appellant’s specification indicates that the fuel management system is a computerized system utilized a computer algorithm designed to respond to various input signals and initiate fuel transfer in a desired sequence (see specification page 4, lines 13-20). The details of the claimed fuel management system are set out in the four specific means-plus-function limitations.

(1) The “means for receiving a first input signal” is set out on page 4, lines 21-24, and indicates that the corresponding structure is the programming of the computerized fuel management system which responds to “the signal conventionally sent to the flight control system of an aircraft when the gear wheels have left the ground to initiate retraction.” Thus, the “means for receiving a first input signal” is interpreted to mean this structure disclosed in Appellant’s specification and equivalents thereof.

(2) The claimed “means for receiving a second input signal” is discussed in Appellant’s specification on page 4, lines 25-29 and covers further programming of the computerized fuel management system and is a signal indicating that the aircraft has descended to a certain altitude on its approach to landing or, alternatively, may be a signal “relayed between the flight control program and the fuel management system when a certain point on a pre-program flight path has been reached” or equivalents thereof.

(3) The “means for initiating the transfer of fuel . . . in response to the first input signal” is described on page 6, lines 1-12, and describes that “a signal is sent to the fuel management system which then initiates transfer of fuel between the tanks as follows.” The computerized fuel management system, in response to the first input signal that the aircraft has left the ground, initiates the fuel transfer.

(4) The “means for initiating the transfer . . . in response to the second input signal” is discussed in Appellant’s specification on page 6, lines 13-19, and confirms that, as the aircraft approaches its destination and begins its descent towards a landing field, “a signal is sent to the fuel management system which initiates a retransfer of remaining fuel”

Thus, in each of the four instances where Appellant has used means-plus-function language, there are specific discussions in the specification which give further definition to those “means-plus-function” recitations. As noted on page 7 of Appellant’s Appeal Brief and also as noted during the Oral Hearing, the burden is on the Examiner to evaluate what is covered by the means-plus-function format in a manner consistent with the Court of Appeals for the Federal Circuit’s decision in the *In re Donaldson* line of

cases. As pointed out above, the Examiner has failed to conduct the appropriate evaluation of what these “means-plus-function” recitations mean. The Board’s decision does not contain any indication that the Examiner’s non-existent analysis was correct or that the Board has conducted its own *de novo* review of what the “means plus function” elements require in order to be anticipated or rendered obvious by a prior art reference.

Because neither the Examiner nor the Board has conducted the proper evaluation of Appellant’s claim language, any application of such analysis would be incorrect.

(B) No identification of where the prior art shows the four “means” recitations

In addition to failing to conduct the proper *In re Donaldson* analysis of the means-plus-function limitations contained in Appellant’s independent claims, neither the Examiner nor the Board has pointed out or identified any instance in which the four recited structures are shown in any one reference or distributed amongst a plurality of references.

While the Board correctly summarizes Appellant’s arguments in the Decision under Sections 1 and 2 on page 10 of the Decision, it does not then answer the questions of where the prior art teaches any of the four means-plus-function limitations (See The Errors in the Final Rejection sections (a) and (b) on pages 6-9 of the Appellants Brief).

Instead of the required analysis, the Board’s Decision goes directly to the conclusion that, in its view, it would be obvious to have computerized and automated the fuel transfer system of Makhonine as suggested by the Bell’s teaching of a computerized fuel transfer system. However, this summary conclusion ignores the structural language of Appellant’s independent claim 1, i.e., where there is any teaching in Makhonine or

Bell of the generation of (a) a first input signal that the aircraft has left the ground or (b) a second input signal that the aircraft is approaching its destination or (c) the means for initiating transfer in response to the first input signal or (d) the means for initiating transfer in response to the second input signal. The sole rationale of the Board's Decision is that Makhonine "provides at least inherent support" and the "inherency" argument will be discussed under a separate heading.

In view of the above, neither the Examiner nor the Board in its recent Decision, has conducted the required analysis to determine what is meant by Appellant's recited "means-plus-function" language claims, nor has it indicated where such properly construed structure is shown or rendered obvious in the two cited references.

In accordance with the burden placed upon examiners by the Court of Appeals for the Federal Circuit in the *In re Fine* case, i.e., the Patent Office can satisfy "its burden only by showing some objective teaching in the prior art of the recited claim structures," the Patent Office Examiner has clearly failed to meet his burden under §103.

Accordingly, reconsideration of the Board's Decision upholding the Examiner's rejection of claims 1, 2, 4 and 8-10 is respectfully requested in that neither the Makhonine nor Bell references teach any of the claimed means-plus-function structures.

(2) Even if claimed structural elements are disclosed in a plurality of references, the burden is on the Examiner to provide some "reason" or "motivation" for combining those references, and there is no such rationale or motivation identified by the Examiner or the Board

On page 9 of Appellant's Appeal Brief and as also argued during the Oral Hearing, the Board is bound by the interpretations of the Court of Appeals for the Federal

Circuit in its consideration of rejections of claims based upon 35 USC §103. As noted in previous Amendments and in the Appeal Brief, and as stated by the Court of Appeals for the Federal Circuit in the *In re Rouffet* case, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998),

“this court requires **the examiner to show a motivation to combine the references** that create the case of obviousness. In other words, **the examiner must show reasons** that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.” (emphasis added).

Appellant has conceded that the Makhonine reference discloses one solution to the problem of reducing bending stresses acting on aircraft wings during flight. Makhonine specifically teaches that either counterweights or fuel loads can be shifted so as to reduce the bending stresses. While Makhonine does disclose that pumps could pump fuel out of one tank and transfer it to another tank after take-off and then back again when landing, other than pumps and fuel tanks, there is no structure disclosed in the Makhonine reference.

Appellant does not deny that Makhonine teaches at least two fuel tanks and at least one pump as recited in Appellant’s independent claim 1. What Makhonine fails to teach is any sort of “fuel management system,” let alone the specific fuel management system set out in Appellant’s claims which requires the four “means-plus-function” elements recited in Appellant’s independent claims. Even if the Examiner and the Board are correct in concluding that Makhonine contains a recognition of a portion of the problem solved by the present invention, there is no structure disclosed in Makhonine with respect

to a fuel management system or how such a system would be configured to address the problem posed.

The Examiner and the Board have concluded that Bell, in teaching a computerized and automated fuel transfer system, somehow inherently teaches the four means-plus-function elements and that it would be obvious to combine the teaching of the computerized fuel management system with those elements to solve the problem of the Makhonine reference. Again, while the Board's argument that the prior art provides "at least inherent support" is a separate issue to be discussed later, it goes without saying that Bell contains no recognition of the problem solved by the claimed invention.

Thus, as required by the Court of Appeals for the Federal Circuit, neither the Examiner nor the Board have shown a "motivation" or a "reason" for combining the Makhonine and Bell references, especially in the manner of Appellant's independent claims. Even if the Examiner and the Board had met their burden of showing some motivation or reason for combining the two references, and if those references were combined, there is still no teaching of the structures recited in Appellant's claim – only that there would be a computerized fuel management system which would shift fuel in the manner of the Makhonine reference. There is still missing the specifically recited structures in Appellant's independent claim 1 which accomplishes this result, i.e., means for receiving the first and second signals and means for initiating transfers in response to the first and second signals. Neither the Examiner nor the Board point to anything in Makhonine or Bell that suggests these structures and, therefore, even if there were some

suggestion for combining the references, in their combined state there is still no disclosure of the structure positively recited in Appellant's independent claims.

In view of the above, reconsideration of the rejection of claims 1, 2, 4 and 8-10 under 35 USC §103, specifically in view of the Court of Appeals for the Federal Circuit *In re Rouffet* decision, is respectfully requested.

(3) The Board's adoption of the "inherency" principle is suggestive that claimed structures are not actually present in any prior art reference, but "inherency" requires that the cited prior art must have a clear teaching of the missing material, and the Board has failed to identify any clear teaching

The Board in its summary conclusion decides the combined teachings of the Makhonine and Bell references would have made it obvious at the time the invention was made to have computerized and automated the fuel transfer system of Makhonine as suggested and taught by Bell. As support for its conclusion, the Board indicates that Makhonine

"provides at least inherent support that (1) a person (if not in fact an automated sensor) on board the aircraft (e.g., the pilot, flight engineer, etc.) actuates some type of switch after the aircraft has left the ground which causes pumps j to initiate the transfer of fuel from the inboard tanks f to the outboard tanks g and (2) a person (if not in fact an automated sensor) on board the aircraft (e.g., the pilot, flight engineer, etc.) actuates some type of switch before the aircraft lands which causes pumps k to initiate the transfer of fuel from the outboard tank g to the inboard tanks f."

In a recent unpublished decision by Judge Bahr (speaking on behalf of the panel comprised of Judges Frankfort, Nase and Bahr in Appeal No. 2005-0696), the Board

correctly announced the principles of inherency and cited the controlling prior art. The Board quoted a 65-year old Court of Customs and Patent Appeals case which said

“inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient. [Citations omitted.]”

The Board’s language in its current decision suggesting that the prior art “provides at least inherent support” appears to be an admission that nowhere in the cited prior art references, Makhonine or Bell, is there any actual support for the four means-plus-function structures recited in Appellant’s independent claims.

The Board appears to ignore the requirement for prior art teaching such claimed structures (those noted above in section (1) and required under the Federal Circuit decisions in the *In re Fine* case) by resorting to “inherent support.” However, neither the Examiner nor the Board point to any actual support for any of these four structures. In fact the only support in the Decision is based upon “probabilities or possibilities.” The mere fact that there might be some disclosure in the Bell invention with respect to Appellant’s claimed “means-plus-function” structures is not a substitute for pointing out where those structures exist. Resorting to “at least inherent support” does not obviate the requirement for the Examiner and the Board to document their support for a rejection.

The Board also noted in a footnote in the above-cited Appeal No. 2005-0696 (Judges Frankfort, Nase and Bahr on the panel) that

“it is well settled that the language ‘[a] person shall be entitled to a patent unless’ in 35 U.S.C. §102 places a burden of proof on the examiner to produce the factual basis for its rejection of an application under sections 102 and 103.”

The Board further stated that

“when relying on the theory of inherency, the examiner has the initial burden of providing a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic reasonably flows from the teachings of the applied prior art.”

There is no “basis in fact and/or technical reasoning” set out by the Examiner or the Board in its Decision to indicate that either Bell or Makhonine teach any one of the four means-plus-function structures recited in Appellant’s independent claim. There is no indication of the generation of signals that the aircraft has left the ground or is approaching its destination, and consequently there can be no structure for receiving such first and second input signals. If the first and second signals are not disclosed, there cannot be any means for initiating fuel transfers in response to the signals.

While one may try to accomplish the Makhonine result by modifying the Bell computerized fuel management system, there is no indication that it would be obvious to do so in the manner of Appellant’s independent claim 1. Where is there disclosed any teaching, i.e., “a basis in fact and/or technical reasoning,” supporting that one would accomplish the benefit in the manner of Appellant’s independent claim 1?

As a result of the above, and the well settled precedent regarding the use of “inherency” to supplement a lack of “basis in fact and/or technical reasoning” in combining references, it is clear that the allegation of inherency does not obviate the Board’s obligation to apply the precedent of the Court of Appeals for the Federal Circuit. If the Federal Circuit precedent is properly applied and the independent means-plus-function claims are properly analyzed, it will be clear that Appellant’s claimed solution to

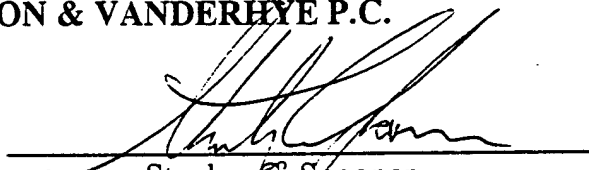
the problem is neither anticipated nor rendered obvious, even if the Makhonine and Bell references were to be combined (and, as noted above, the propriety of this combination has already been questioned).

Accordingly, in view of the three above main arguments, Appellant requests rehearing and reconsideration of the Decision of the Board mailed March 10, 2005 in the above-captioned Appeal No. 2005-0113. It is also respectfully requested that upon such rehearing, that the Board reverse the Examiner's rejection of claims 1, 2, 4 and 8-10 and allow those claims as well, along with already allowed claims 3 and 5-7.

Respectfully submitted,

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